

## CLAIMS

Having thus described the aforementioned invention, we claim:

1. A stack for venting exhaust gases from a combustion chamber of a solid fuel burning apparatus to a flue, said stack comprising:
  - an elongated tubular member having a first end, a second end and at least one inlet proximate said first end, wherein said second end defines an outlet,
  - 5 wherein said outlet is adapted to register with a flue; and
  - at least one conduit member in fluid communication with said first tubular member, said conduit member having an open end adapted to be in fluid communication with a combustion chamber and an oppositely disposed closed end proximate to and in fluid communication with said inlet, wherein said at least one
  - 10 conduit member defines a channel for communicating exhaust gases from said open end of said at least one conduit member to said inlet whereby a tortuous airflow path is defined from said open end of said at least one conduit member to said outlet.
2. The stack for venting exhaust gases of Claim 1 wherein two said conduit members are in fluid communication with said elongated tubular member in spaced relation.
3. The stack for venting exhaust gases of Claim 1 wherein said at least one conduit member is carried by said elongated tubular member.
4. The stack for venting exhaust gases of Claim 1 wherein said elongated tubular member and said at least one conduit member each have a rectangular cross-section.
5. The stack for venting exhaust gases of Claim 1 wherein said elongated member and said at least one conduit member each have a circular cross-section.
6. The stack for venting exhaust gases of Claim 5 wherein said elongated member is coaxial with said conduit member.

7. The stack for venting exhaust gases of Claim 1 wherein said conduit member receives said first end of said elongated member within said channel.

8. The stack for venting exhaust gases of Claim 1 wherein said stack for venting exhaust gases is a component of a solid fuel burning furnace.

9. The stack for venting exhaust gases of Claim 8 wherein said solid fuel burning furnace is a boiler.

10. The stack for venting exhaust gases of Claim 1 wherein said tortuous airflow path is a substantially vertical tortuous airflow path.

11. A solid fuel burning apparatus, said apparatus comprising:

a firebox having an opening in at least one end for receiving the solid fuel and having a main body portion defining a combustion chamber with a firebox end wall portion opposite the open end;

5 a vent member for allowing combustion air to flow into said firebox main body portion;

a control mechanism in active engagement with said vent member for selectively regulating said flow of combustion air into said firebox main body portion;

10 a stack member defined by an elongated tubular member having a first end, a second end and at least one inlet proximate said first end, wherein said second end defines an outlet, wherein said outlet is adapted to register with a flue for discharging gaseous combustion products from said combustion chamber; and at least one conduit member in fluid communication with said first tubular  
15 member, said conduit member having an open end adapted to be in fluid communication with a combustion chamber and an oppositely disposed closed end proximate to and in fluid communication with said inlet, wherein said at least one conduit member defines a channel for communicating exhaust gases from said  
20 open end of said at least one conduit member to said inlet whereby a tortuous airflow path is defined from said open end of said at least one conduit member to said outlet.

12. The stack for venting exhaust gases of Claim 11 wherein two said conduit members are in fluid communication with said elongated tubular member in spaced relation.

13. The stack for venting exhaust gases of Claim 11 wherein said at least one conduit member is carried by said elongated tubular member.

14. The solid fuel burning apparatus of Claim 11 wherein said apparatus further comprises a heating chamber surrounding at least a portion of said firebox, wherein said heating chamber is adapted for receiving a fluid to be heated by said solid fuel burning apparatus.

15. The solid fuel burning apparatus of Claim 11 wherein said firebox main body portion has a substantially rectangular cross-section.

16. The solid fuel burning apparatus of Claim 11 wherein said firebox main body portion has a substantially circular cross-section.

17. A solid fuel burning apparatus, said apparatus comprising:  
a firebox having an opening in at least one end for receiving the solid fuel and having a main body portion defining a combustion chamber with top, bottom and side firebox wall portions and a firebox end wall portion opposite the open end;  
5 a vent member for allowing combustion air to flow into said firebox main body portion;

a control mechanism in active engagement with said vent member for selectively regulating said flow of combustion air into said firebox main body portion;

10 a stack member defined by an elongated tubular member having a first end, a second end and at least one inlet proximate said first end, wherein said second end defines an outlet, wherein said outlet is adapted to register with a flue for discharging gaseous combustion products from said firebox; and

15 at least one conduit member carried by said first tubular member, said conduit member having an open end adapted to be in fluid communication with a combustion chamber and an oppositely disposed closed end proximate to and in

fluid communication with said inlet, wherein said at least one conduit member defines a channel for communicating exhaust gases from said open end of said at least one conduit member to said inlet whereby a tortuous airflow path is defined from said open end of said at least one conduit member to said outlet..

20 18. The solid fuel burning apparatus of Claim 17 wherein said apparatus further comprises a heating chamber surrounding at least a portion of said firebox, wherein said heating chamber is adapted for receiving a fluid to be heated by said solid fuel burning apparatus.